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10/763,598	01/23/2004	Robert J. Burnett	P1936US00	7716

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EXAMINER

KAWSAR, ABDULLAH AL

ART UNIT	PAPER NUMBER
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2195

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/763,598	Applicant(s) BURNETT ET AL.	
	Examiner ABDULLAH AL KAWSAR	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-4, 6-20 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al.(Choquier) US Patent No. 5774668, in view of “A Distributed Resource Management Architecture that Supports Advance Reservations and CO- Allocation” by Ian Foster(Foster).

4. As per claim 1, Choquier teaches the invention substantially as claimed including a method of managing performance of a grid job on a grid computer of a computing grid, comprising:

creating a file of at least one job performance factor governing performance of grid jobs on a particular grid computer (col 10, lines 34-38; col 2, lines 58-63); and

assigning a grid job to a grid computer based upon the at least one job performance factor in a file (col 2, lines 15-20; lines 53-56; col 11, lines 30-43);

performing the grid job on the grid computer in conformance with each job performance factor for the grid computer (col 2, lines 47-56);

Choquier do not specifically disclose wherein the at least one job performance factor in the file includes a level of security of the job performance on the grid computer relative to other grid computers of the computing grid.

However Foster teaches wherein the at least one job performance factor in the file includes a level of security of the job performance on the grid computer relative to other grid computers of the computing grid (page 31, Left Column, lines 23-35, “The agent must now discover computational and bandwidth resources that can collectively provide desired end-to-end QoS..... and security policies, perhaps because data is proprietary.”).

5. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Foster into the method of Choquier to have security level as job performance factor. The modification would have been obvious because one of the ordinary skills of the art would utilize different performance factor based on the users need to perform the job and that can include security level of the grid computer.

6. As per claim 2, Choquier teaches creating the file of at least one job performance factor includes storing the file on the grid computer to which the job performance factors apply (fig 1, element 140; col 10, lines 39-42).

7. As per claim 3, Choquier teaches additionally including reporting the file of the at least one job performance factor to a grid manager that assigns grid jobs to grid computers of the computing grid (col 10, lines 42-45; col 2, lines 46-52).

8. As per claim 4, Choquier teaches additionally including accessing the file of at least one job performance factor of one of the grid computers before assigning a grid job to the grid computer (col 13, lines 40-44).

9. As per claim 6, Choquier teaches the at least one job performance factor includes an amount of processor time utilization to reserve for processing local jobs on the grid computer (col 10, lines 66-67 through col 11, line 1).

10. As per claim 8, Choquier teaches the at least one job performance factor for one of the grid computers is different than at least one job performance factor for another one of the grid computers (col 10, lines 20-26).

11. Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al.(Choquier) US Patent No. 5774668, in view of “A Distributed Resource Management Architecture that Supports Advance Reservations and CO- Allocation” by Ian Foster(Foster), as applied to claim 1, and further in view of Hubbard(Hubbard) US Patent No. 6654783.

12. As per claim 7, Choquier does not specifically disclose at least one job performance factor includes an operating time window for performing grid jobs on the grid computer.

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However, Hubbard teaches at least one job performance factor includes an operating time window for performing grid jobs on the grid computer (col 10, lines 30-33).

13. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Hubbard into the combined method of Choquier and Foster to have an operating time window as job performance factor. The modification would have been obvious because one of the ordinary skills of the art would have a specific window to be able to get the best result according to users need to perform the job.

14. As per claim 9, Hubbard teaches creating the file additionally comprises including at least one local operating condition for the grid computer in the file, and wherein the at least one local operating condition recorded in the file comprises an indication of at least one time period of optimal electricity rate for operating the grid computer (col 16, lines 25-35; table 1; col 10, lines 31-32).

15. As per claim 10, Hubbard teaches creating the file additionally comprises including at least one local operating condition for the grid computer in the file, and wherein the at least one local operating condition recorded in the file comprises an indication of any virus alerts for the grid computer (col 8, lines 23-31).

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16. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al.(Choquier) US Patent No. 5774668, in view of “Economic-based Distributed Resource Management and Scheduling for Grid Computing” by Rajkumar Buyya(Buyya).

17. As per claim 11, Choquier teaches the invention substantially as claimed including a method of monitoring status of a grid job on a computing grid including at least two grid computers, comprising

forming a grid job by a grid manager for being performed by at least one grid computer (col 2, lines 47-52);

creating a job performance file based on the grid job (col 10, lines 34-38); and

Choquier does not specifically disclose sending the job performance file with the grid job to one of the grid computers.

However Buyya teaches sending, by the grid manager, the job performance file with the grid job to one of the grid computers (page 48, lines 28-29; lines 30-31; lines 35-37)

18. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Buyya into the method of Choquier to send the performance file with the job to the grid computer. The modification would have been obvious because one of the ordinary skills of the art would have send the job file with the job to be able to monitor the parameters on the executing system platform and make better load balancing decision.

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19. As per claim 12, Buyya teaches the job performance file includes at least one milestone to be reached in performing the grid job before completion, and additionally including reporting to a grid manager by the grid computer when each milestone is reached (page 87, lines 3-4; lines 13).

20. As per claim 13, Buyya the job performance file includes at least one expected time period for each milestone in which the milestone is expected to be achieved (page 86, lines 41-42).

21. As per claim 14, Buyya teaches additionally including dividing a data set for the grid job into at least two portions, sending a first portion of a data set with the grid job to one of the grid computers for being processed on the grid computer, and sending a second portion of the data to the grid computer when the grid computer reports the achievement of one of the milestones (page 22, lines 31-36; page 49, lines 13-19).

22. As per claim 15, Buyya teaches the job performance file includes at least one deadline for reporting status of the performance of the grid job to a grid manager, and additionally including reporting to the grid manager by the grid computer when each deadline is reached (page 51, lines 11-14; figure 4.3).

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23. As per claim 16, Buyya teaches additionally including assigning the grid job to at least one other grid computer if the grid computer does not report to the grid manager by the at least one deadline (page 67, lines 21-24).

24. As per claim 17, Buyya teaches the job performance file includes at least one milestone to be reached in performing the grid job before completion and at least one deadline for reporting status of the performance of the grid job to the grid manager, and additionally including reporting to a grid manager by the grid computer when each deadline occurs regardless of whether the at least one milestone has been reached (page 90, lines 36-48).

25. As per claim 18, Buyya teaches the job performance file includes a relative priority for performing the grid job, and additionally including performing by the grid computer a grid job having a relatively higher priority before a grid job having a relatively lower priority (page 148, lines 16-18).

26. As per claim 19, Choquier does not specifically disclose reporting to the grid manager additionally includes initiating a network connection between the grid computer and a grid manager computer when a network connection is not active and transmitting the report over the network connection (col 10, lines 39-45; col 2, lines 21-27).

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27. It would have been obvious to a person of ordinary skill in art at the time of invention was made to establish a connection to be able to report back to the grid manager if the connection is not always active connection.

28. As per claim 20, Choquier teaches reporting to the grid manager additionally includes reporting a level of availability of resources of the grid computer to the grid manager (col 10, lines 34-45).

Response to Arguments

29. Applicant's arguments filed 08/18/2008 have been fully considered but they are not persuasive.

30. In the remarks applicant argues:

(1) Choquier fails to teach “an amount of processor time utilization to reserve for processing local jobs on the grid computer”.

(2) Hubbard fails to teach “the time when agent may utilize system resources”.

(3) Hubbard fails to teach “at least one time period of optimal electricity rate”.

(4) Buyya fails to teach “sending, by the grid manager, the job performance file with the grid job to one of the grid computer”.

31. Examiner respectfully disagree with applicant:

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i. As to point (1), applicant supports his argument mentioning that Choquier teaches “a current load” without regard of the origination of the load. Examiner respectfully disagrees with the applicant. The claimed limitation is broad and does not specifically disclose what is a “local job” and the origination of the local job. Examiner interprets the limitation as the current loads on the system as it is already loaded on the system it is the local job on the system. Choquier teaches current load(local job) on the server that is using the CPU and reserved for the server and the rest of the CPU is available for job allocation (col 10, lines 66-67 through col 11, lines 1-5).

ii. As to point (2), applicant supports his argument mentioning that Hubbard fails to teach "the time when agent may utilize system resources" providing the benefit of getting “the best result according to users need to perform the job”. Examiner respectfully disagrees with the applicant. Examiner fails to see the limitation "**the times when the agent may utilize system resources**" providing the benefit of getting "**the best result according to users need to perform the job**". The claimed limitation does not disclose anything about a time when a agent can utilize the system resources to benefit the best result according to users need to perform the job. In order for the examiner to consider those limitation applicant is suggested to amend the claim to include the limitations in the claim language.

iii. As to point (3), applicant supports his argument mentioning that Hubbard mentions a many factors in table 1 but electricity rate is not one of them. Examiner

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respectfully disagrees with the applicant. Hubbard teaches utilizing the system resources when the system is idle in the time window of 12am to 6am, when the system is idle during the night time the system is in standby mode or low power mode and the system electricity consumption is optimal for operating the computer(col 10, lines 31-32).

Moreover in table 1 Hubbard teaches many factor for utilization that includes ACPI(Advanced Configuration of Power Interface), Full-on power mode, Stand-by Mode, Video logic power down, HDD, FDD, FDC power down and many other power option factors that are all related to electricity consumption of the system(col 16, lines 25-35; table 1).

iv. As to point (4), applicant supports his argument that Buyya fails to teach the limitation “sending, by the grid manager, the job performance file with the grid job to one of the grid computer” without showing the difference between the claimed limitation and the reference cited. Examiner respectfully disagrees with the applicant. Applicant does not provide any support to the argument to show the difference or analysis of the reference. Buyya teaches a grid manager(Nimrod-G) that is being used to submit jobs for execution. The grid manager(Nimrod-G) provides the task farming engine that enables “plugging”(performance file with job) of a user defined schedules and problem solving environment. The custom farming engine enables the execution of the job, scheduling and resource reservation based on the performance file(page 48, lines 28-37).

Conclusion

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

33. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDULLAH AL KAWSAR whose telephone number is (571)270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

/Abdullah-Al Kawsar/
Examiner, Art Unit 2195